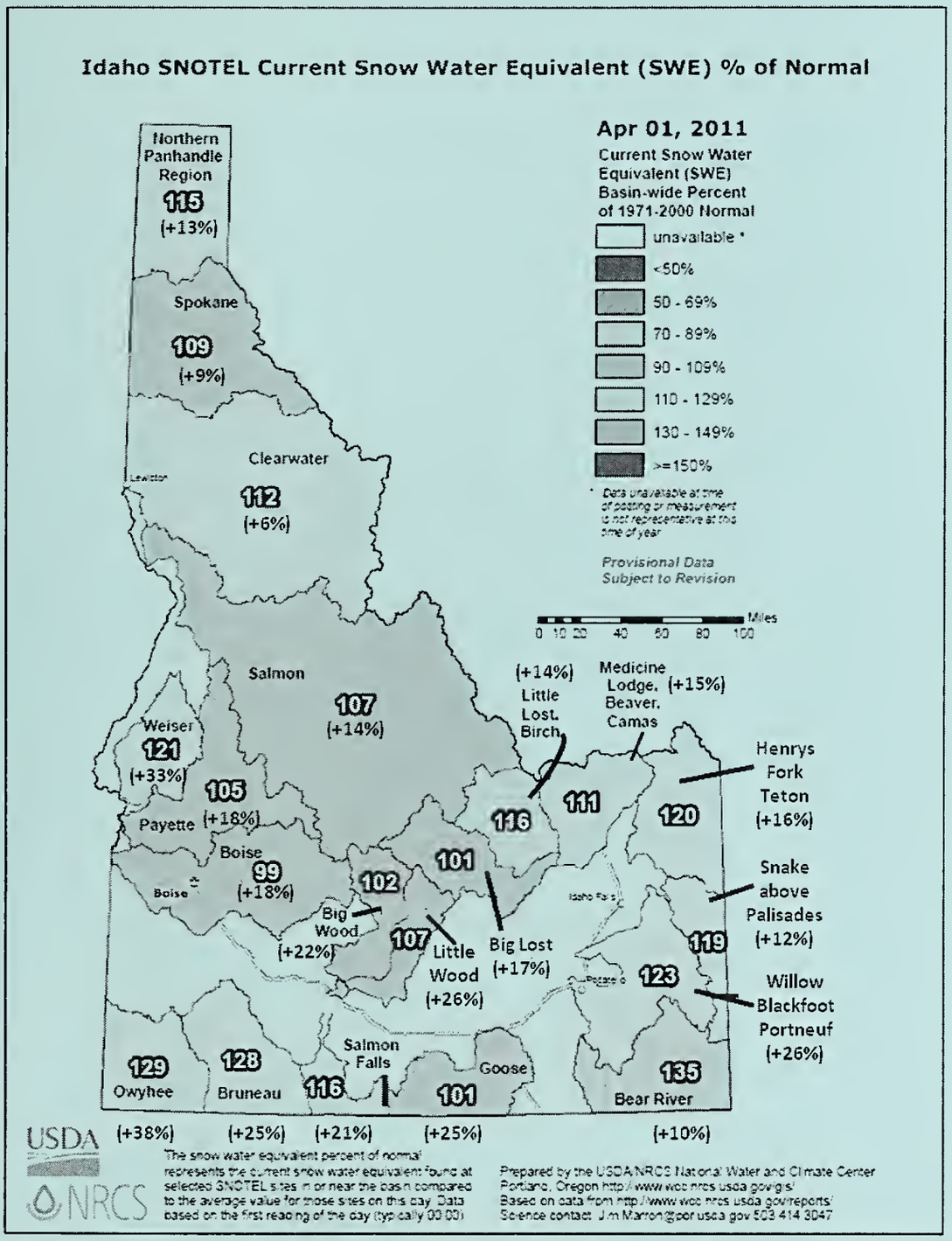
United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report
April 1, 2011



Up to twice the normal monthly precipitation fell in March, breaking records at some SNOTEL sites. The above map shows the April 1 snowpack as percent of normal based on SNOTEL data, as well as, the percent increase since March 1 in parentheses. Snowpacks saw a dramatic increase of 15-38% across most of Idaho, ensuring what should be an adequate water supply statewide this summer.

Basin Outlook Reports
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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

April 1, 2011

SUMMARY

There were more snowy days than sunny ones in March. All that precipitation ensures an adequate water supply for Idaho this summer and many basins will have excess water that will recharge groundwater and increase base flows in rivers and springs. Precipitation amounts ranged from average to twice normal and 26 SNOTEL stations across the region set new records for the month. Snowpacks in central Idaho increased from 80% of average to average on April 1. Snowpacks now range from 100-140% of average for most basins. Streamflow forecasts also increased and now range from just above average in the Salmon drainage to 150% across Idaho's southern streams. Mother Nature has provided enough water to create a rare set of streamflow forecasts where all the rivers in Idaho are forecast at average or well-above average for this summer. After a stormy March, reservoir operators released water to create more storage space for the higher elevation snowmelt. Overall, water supplies will be more than adequate for water users across the state. The mountains act like a giant reservoir storing snowfall all winter. How the snow melts and fills our rivers and lakes will depend on spring air temperatures and rain.

SNOWPACK

The snow continued accumulating throughout Idaho during the entire month of March. The lowest snowpacks in the state are average in the headwaters of the MF Salmon, MF Boise, NF Boise, and Big Wood rivers. A few individual sites scatted across the state are near record high or in the top five for April 1 snow water content. Allen Ranch in eastern Idaho is 4th highest since 1961 and Hams Fork in southeast Wyoming is the highest since 1986. The highest snowpacks are generally 130-140% of average in the Willow, Raft, Bruneau, Owyhee and Bear drainages. The anomaly is the Owyhee basin where eight SNOTEL sites are showing a snowpack of 134% of average. However, when these sites are combined with the other 11 snow courses and aerial markers, that represent more of the lower elevation ground, the snowpack is even higher at 161% of average.

PRECIPITATION

March brought above average precipitation amounts across the state with some areas receiving twice their normal monthly total. Idaho's west-central, central and southern drainages received 175-190% of their normal March amounts. The lowest amounts were 139% of average in the Clearwater basin. Elsewhere, amounts ranged from 155-165% of average. Twenty-six SNOTEL sites scattered across our monitoring region set a new record for the most precipitation received in March. Most of these daily SNOTEL records start in the early 1980s. Eighteen stations in March received double digit precipitation amounts, 10 inches or more. Normal March amounts for these stations range from 5 inches in central Idaho to 9 inches in northern Idaho. Water year-to-date precipitation since October 1, 2010 is average or better. The least amount has fallen in the Big Wood basin for the year at 103% average. The greatest amounts fell in southern Idaho and are about 130% of average in the Owyhee, Bear River basins and the lower elevation drainages in eastern Idaho that include Willow, Blackfoot and Portneuf basins.

The weather pattern that has remained in place since mid-February is predicted to continue bringing cool wet weather into April and possibly beyond. Short and long-term weather forecasts call for cool and wet conditions in the Pacific Northwest and across the northern tier of the US through April. The three month extended climate forecast for April, May and June calls for cooler than normal temperatures and equal chances of below normal, normal or above normal precipitation amounts. Years with similar climatological indexes as this year are 1917, 1971, 1974 and 2008. Each of these years had below normal temperatures with normal to slightly above normal precipitation amounts during the springtime (April, May and June). If the current weather trends continue and if the past year's trends can be used to predict the future, water users and managers should prepare for a cool and wet spring. If this is the case, water users may consider favoring the higher streamflow forecasts listed in this report (30% and 10% exceedance forecasts).

RESERVOIRS

Reservoirs are in good shape across the state with many releasing water to create storage space for when the higher elevation snow melts. The lowest storage is in Brownlee, Blackfoot, Salmon Falls, Wildhorse, Oakley and Bear Lake which are 33-58% of capacity, 62-89% of average. The Boise and Payette reservoir systems and combined storage in Palisades and Jackson are 66-75% of capacity, 105-125% of average. Henrys Lake is full and passing inflows. Even Owyhee Reservoir will fill; releases are being made to ensure it doesn't fill too early or before the remaining bulk of water is flushed from the higher elevations. Owyhee Reservoir is 88% full and the streamflow forecast is for 110% of average for the April-July period. Dworshak Reservoir is being drafted to make room for future snowmelt; it is half full, which is 72% of average and is storing 400,000 acre-feet less than a month ago. The hundreds of natural lakes in Idaho's Panhandle Region will fill and most of Idaho's southern reservoirs will fill with the exception of the large storage facilities such as Salmon Falls, Oakley and Bear Lake. However, their water users will still have adequate irrigation supplies based on current storage and projected inflows. For users already thinking about next year, carryover storage looks promising at this point but the actual amounts will be determined by spring rains, when irrigation starts, and the summer's irrigation demand.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

With the good precipitation in March, most people would have thought the March volumes would be higher than they were. Only about a dozen of the stream gaging stations had above average runoff volumes with the highest being the Weiser River near the town of Weiser at 176% of average. March volumes for most of the 60 plus stations used for streamflow forecasting were in the 70-95% of average range while about ten were only flowing at about half of average. This is a result of the majority of March's precipitation falling as snow in the high country and not as rain like we experienced in mid-January. Streams got a sudden increase from the warm temperatures and rain the last week of March but did not jump up enough to make up for the below normal flows in the first half of the month. The high elevation snowpack is still left to melt. Streamflow volume forecasts across the state jumped 5-25% from the mid-March forecasts. Streamflow forecasts range from near average in the Salmon basin to 150-160% across southern Idaho's high desert rivers including the Bear River.

Note: Forecasts published in this report are NRCS forecasts. Jointly coordinated published forecasts by the USDA NRCS and the NOAA NWS are available from the joint west-wide Water Supply Outlook for the Western US at http://www.wcc.nrcs.usda.gov/wsf/westwide.html. The volumes referenced in these narratives are the 50% Chance of Exceeding Forecast, unless otherwise noted. Users may wish to use a different forecast to reduce their risk of having too much or too little water.

RECREATION

The month of March provided excellent winter recreation opportunities across the whole state of Idaho for those who like powder. There were more snowy days than sunny ones in March. The mountains in the whole state of Idaho are reporting average or better snowpacks on April 1 and there should be enough snow in the mountains to continue your favorite winter recreation activity for the next month or more. For those ready for spring, you'll be able to access lower elevation trails as they dry out around the state. With the good inflows, reservoirs will stay full longer after the peak flows diminish and provide excellent reservoir opportunities across the state. For the river runners, Mother Nature has provided enough water for a rare set of streamflow forecasts and all the rivers in Idaho are forecast at average or well-above average for the April-September period. If you are waiting for some action-packed, thrilling streamflows, then keep watching for consecutive hot days, rain on melting snow or both. These conditions could drive the peaks to potentially hazardous levels given that the hydrologic system is primed, so know your limits before you go. Once the streamflow peaks have occurred, the long recession flows will provide plenty of good fishing and family friendly floating through the summer months.

ANNOUNCING THE TRIAL PERIOD FOR THE DATA RETRIEVAL TOOL

The Snow Survey and Water Supply Forecasting Program is developing a web-based tool that will allow users to access data and perform data analysis. This tool will eventually replace and upgrade some current products on the web. The first step in that process is the release of a beta version data retrieval tool. The idea is to provide you the opportunity to give feedback, identify any difficulties in the operation of the tool and suggest improvements. Data provided through the tool is from the NRCS Air and Water Database (AWDB). Please see the NRCS National Water Climate Center home page to access and provide feedback under the "Give us feedback" link by June 3: http://www.wcc.nrcs.usda.gov/

IDAHO WATER SUPPLY OUTLOOK REPORT

From now on all hard copy subscribers will receive the full water supply report, instead of some subscribers getting only individual basins. This change increases our efficiency. Users can download and print individual basins from the following web page and then selecting Idaho and report format HTML. http://www.wcc.nrcs.usda.gov/cgibin/bor.pl

We also have an email address subscription list to notify readers when the report is available online. An email is sent to customers each month providing immediate notification when the report is available. You can either cancel your hardcopy subscription or add the email notification to it. If you wish to be added to this email list, contact: Adam Birken at adam.birken@id.usda.gov or (208) 685-6989. Email list subscribers are also notified of other products that are only available online; these include the June Water Supply Outlook Report and the Fall Summary.

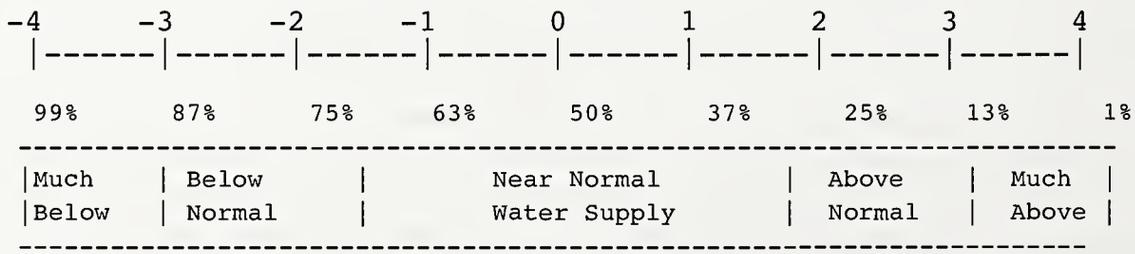
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) April 1, 2011

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
Spokane	2.8	2008	NA
Clearwater	1.8	2009	NA
Salmon	0.4	1998	NA
Weiser	1.8	2008	NA
Payette	1.3	1993	NA
Boise	1.4	1999	-2.2
Big Wood	1.2	1996	-0.3
Little Wood	1.0	2005	-1.8
Big Lost	0.4	2009	-0.1
Little Lost	1.0	2009	0.3
Teton	2.6	1996	NA
Henrys Fork	1.2	2006	-3.7
Snake (Heise)	2.8	1996	-1.6
Oakley	0.4	2007	-1.3
Salmon Falls	2.6	2006	-1.6
Bruneau	3.4	2006	NA
Owyhee	3.0	1998	-3.5
Bear River	-0.4	2001	-3.4

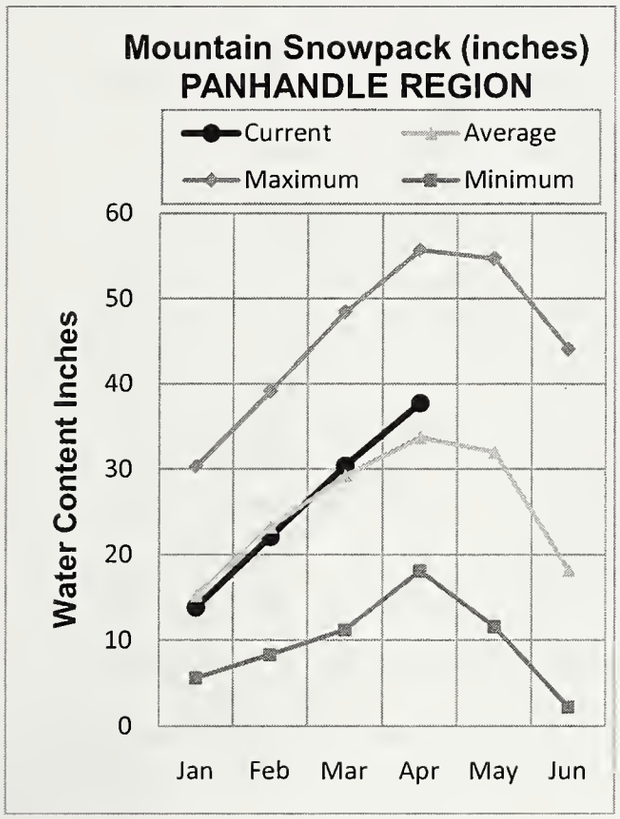
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

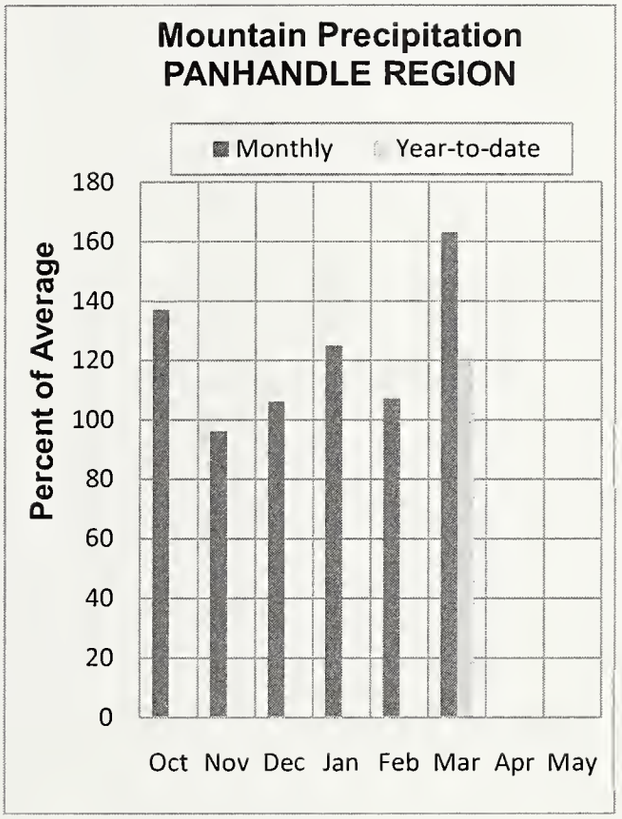


NA = Not Applicable, Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION

APRIL 1, 2011





WATER SUPPLY OUTLOOK

The delicate balance between not enough water and too much is being tested this year. Moisture-rich storms paraded through the northwest in March and brought near double the normal amount in some locations. There have been much higher snowpack years such as 1997, but two of the SNOTEL sites in the area had record breaking March precipitation since they were installed in the early 1980's. Those sites are Humboldt Gulch located in the Coeur d'Alene drainage north of Wallace and Mosquito Ridge located near the Coeur d' Alene and Clark Fork divide. As a whole, the mountains in the Panhandle region received 163% of normal precipitation for the month and the conditions bumped the snowpack up to 112% of average. With wet soil conditions, standing water in valleys, melting mid-elevation snow, rising rivers and more precipitation on its way, the threat of flooding has raised an eyebrow or two. A lot of snow is left to melt in the high country and how it melts will be the determining factor in peak streamflows and potential overtopping of river banks. Storms that bring warm temperatures with ample rain and/or consecutive hot days are two conditions that would create potentially hazardous streamflows in the weeks to come. Since the balance point is leaning towards excess water, there should be no concerns of water shortages or lack of water for recreational opportunities this summer. The seasonal streamflow forecasts range from 104% of average for the Priest River to 136% of average for the NF Coeur d'Alene River, with all the rest of the rivers in-between.

PANHANDLE REGION
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Kootenai R at Leonia (1,2)	APR-JUL	6670	7400	7740	110	8080	8810	7040
	APR-SEP	7840	8590	8930	110	9270	10000	8120
Moyie River at Eastport	APR-JUL	345	395	430	106	465	515	405
	APR-SEP	355	410	445	106	480	535	420
Smith Ck nr Porthill	APR-JUL	112	129	141	115	153	170	123
	APR-SEP	115	135	148	115	161	181	129
Boundary Ck nr Porthill	APR-JUL	117	130	139	113	148	161	123
	APR-SEP	123	137	146	113	155	169	129
Clark Fork at Whitehorse Rpds (1,2)	APR-JUL	11600	13100	13700	121	14300	15800	11300
	APR-SEP	12800	14400	15100	121	15800	17400	12500
Pend Oreille Lake Inflow (2)	APR-JUL	13659	14696	15400	121	16104	17141	12700
	APR-SEP	14817	15998	16800	121	17602	18783	13900
Priest R nr Priest River (1,2)	APR-JUL	686	799	850	104	901	1014	815
	APR-SEP	722	848	905	104	962	1088	870
NF Coeur d'Alene R at Enaville	APR-JUL	824	935	1010	137	1085	1196	740
	APR-SEP	869	983	1060	136	1137	1251	780
St. Joe R at Calder	APR-JUL	1161	1274	1350	118	1426	1539	1140
	APR-SEP	1225	1341	1420	118	1499	1615	1200
Spokane R nr Post Falls (2)	APR-JUL	2700	3034	3260	128	3486	3820	2550
	APR-SEP	2824	3167	3400	128	3633	3976	2650
Spokane R at Long Lake (2)	APR-JUL	2937	3302	3550	125	3798	4163	2850
	APR-SEP	3201	3581	3840	125	4099	4479	3070

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE	3451.0	2165.0	2534.0	1886.7
FLATHEAD LAKE	1791.0	810.1	786.2	738.5
NOXON RAPIDS	335.0	305.3	324.5	272.9
PEND OREILLE	1561.3	818.1	553.4	763.6
COEUR D'ALENE	238.5	178.1	93.3	169.5
PRIEST LAKE	119.3	54.1	49.5	65.5

PANHANDLE REGION
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	25	197	121
Moyie River	6	176	118
Priest River	4	151	114
Pend Oreille River	96	193	119
Rathdrum Creek	2	205	125
Hayden Lake	0	0	0
Coeur d'Alene River	10	229	120
St. Joe River	6	222	109
Spokane River	16	221	115
Palouse River	1	0	98

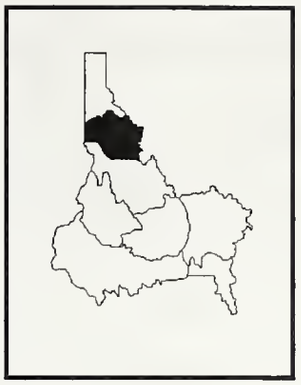
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

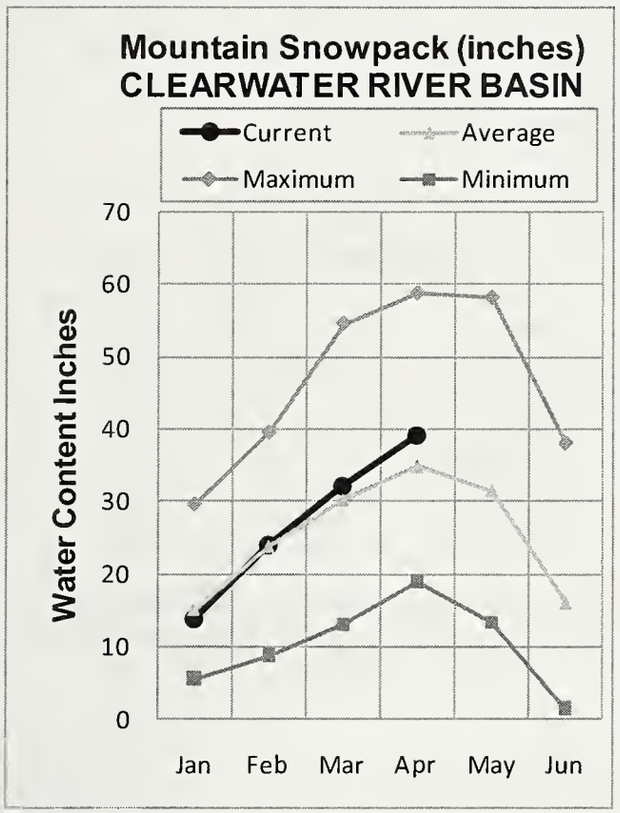
The average is computed for the 1971-2000 base period.

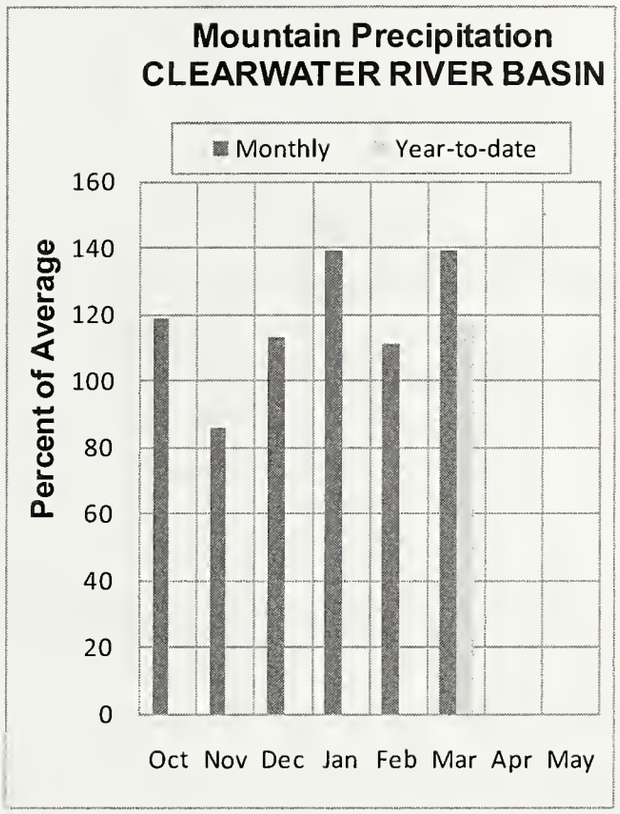
(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average..

CLEARWATER RIVER BASIN

APRIL 1, 2011







WATER SUPPLY OUTLOOK

The stormy month of March brought 139% of average precipitation to the mountains resulting in an April 1 snowpack of 112% of average overall. There were higher snow years like 1997 and 2008, but the current snowpack is double last year's amount on April 1 when the snowpack was near record low in the Clearwater basin. Soils are saturated, creeks are rising and the wet storm cycle shows no signs of stopping. Usually, the peak of the snow water content occurs this month. If this month of April is like last April when precipitation was 123% of normal, then the snowpack will continue to build and postpone the snowmelt. Throughout most of north Idaho, the excess water could be a problem to some and a thrill to others if the snow melts rapidly from abundant rain or consecutive hot days. Based on the current conditions, the April-July streamflow forecasts call for 113-114% of average flows for the Selway, Lochsa, Clearwater Rivers and Dworshak inflow. However, if the weather remains wet and cool, water users may want to lean towards the wetter forecast (30% chance of exceedance forecast) that are in the 130% of average ballpark.

CLEARWATER RIVER BASIN
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Selway R nr Lowell	APR-JUL	2090	2240	2350	114	2460	2610	2060
	APR-SEP	2180	2340	2460	113	2580	2740	2170
Lochsa R nr Lowell	APR-JUL	1500	1630	1710	112	1790	1920	1530
	APR-SEP	1560	1700	1790	111	1880	2020	1610
Dworshak Res Inflow (1,2)	APR-JUL	2400	2810	3000	114	3190	3600	2640
	APR-SEP	2520	2960	3160	113	3360	3800	2800
Clearwater R at Orofino (1)	APR-JUL	4340	4960	5240	113	5520	6140	4650
	APR-SEP	4550	5200	5500	112	5800	6450	4900
Clearwater R at Spalding (1,2)	APR-JUL	7010	8000	8450	114	8900	9890	7430
	APR-SEP	7370	8420	8900	113	9380	10400	7850

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	1619.2	2308.7	2244.1

CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	202	114
Lochsa River	4	203	110
Selway River	6	182	105
Clearwater Basin Total	18	202	111

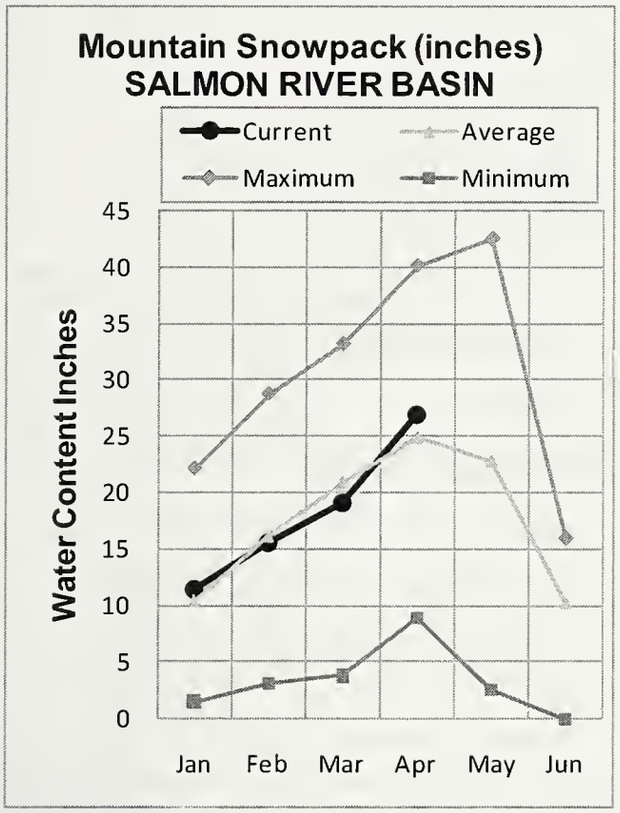
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

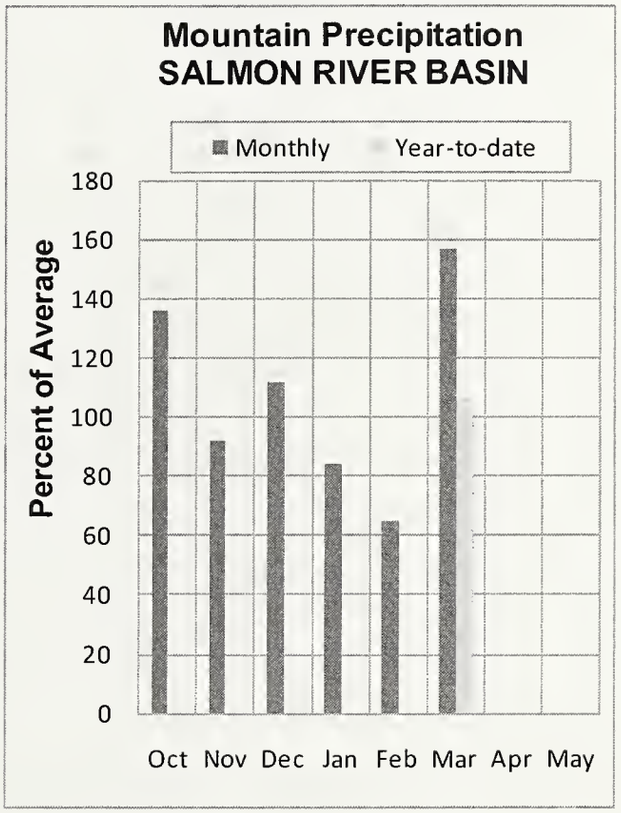
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

SALMON RIVER BASIN

APRIL 1, 2011





WATER SUPPLY OUTLOOK

On April 1, the Salmon basin has a snowpack of 108% average and is similar to 2008. Even though the snow is similar on April 1, how the snow accumulated was quite different. In 2008, each month leading up to April 1 had above average snow, whereas this year, snow was lagging in January and February but March brought 157% of average precipitation and made up for the earlier months deficit. Lack of water supplies should not be an issue this year, but excess water may delay when farmers can work the fields due to the cool and wet spring. River recreationists will enjoy the benefits of the snowpack and the wetter spring weather. The April-July forecasts call for average to slightly above average streamflows for the rivers in the Salmon basin including the Middle Fork and Lemhi Rivers. Since the soils are wet, streams are increasing and the snowpack is ripening, runoff is imminent. The peak streamflows could be high depending on the occurrence of consecutive hot days, rain on the melting snowpack or a combination these events.

SALMON RIVER BASIN
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Salmon R at Salmon (1)	APR-JUL	635	795	865	101	935	1090	855
	APR-SEP	730	915	1000	100	1080	1270	1000
Lemhi R nr Lemhi	APR-JUL	64	78	88	102	99	115	86
	APR-SEP	78	94	105	100	117	136	105
MF Salmon R at MF Lodge	APR-JUL	644	755	830	106	905	1016	785
	APR-SEP	708	834	920	105	1006	1132	875
SF Salmon R nr Krassel RS	APR-JUL	255	290	310	107	330	365	291
	APR-SEP	285	310	330	106	350	375	312
Johnson Ck at Yellow Pine	APR-JUL	166	192	210	103	230	255	204
	APR-SEP	183	210	225	104	240	265	217
Salmon R at White Bird (1)	APR-JUL	4670	5620	6050	103	6480	7430	5850
	APR-SEP	5120	6190	6670	103	7150	8220	6480

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

SALMON RIVER BASIN
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	10	159	102
Lemhi River	11	155	110
Middle Fork Salmon River	3	169	99
South Fork Salmon River	3	174	104
Little Salmon River	4	166	116
Salmon Basin Total	32	167	108

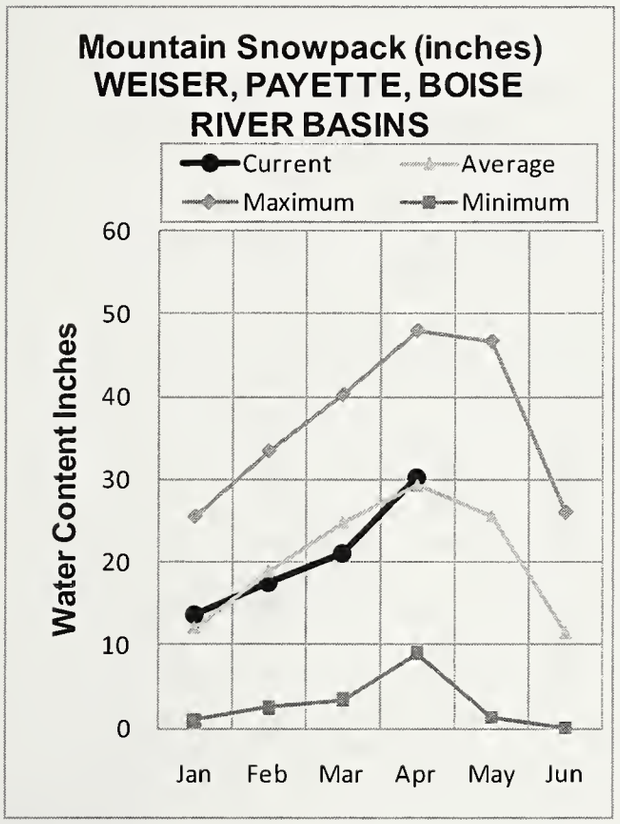
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

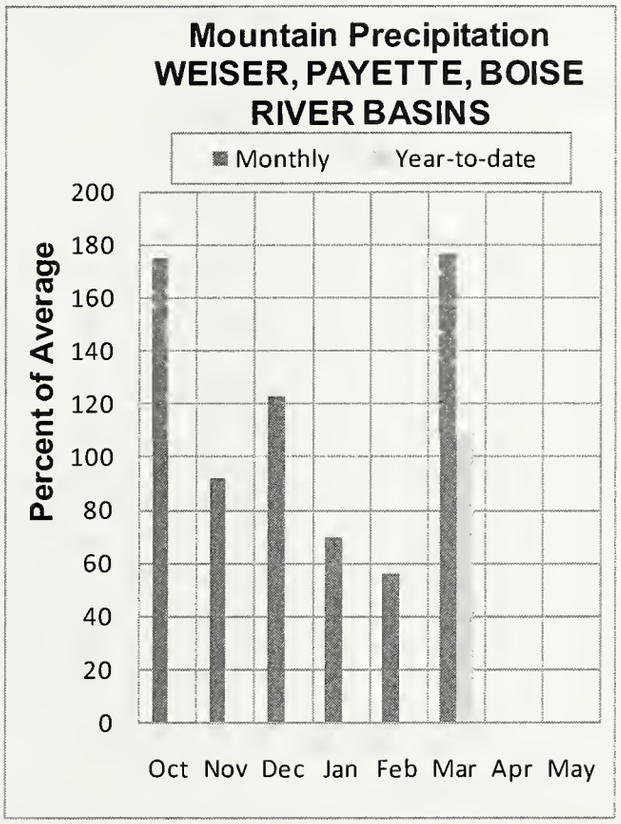
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

WEISER, PAYETTE, BOISE RIVER BASINS

APRIL 1, 2011





WATER SUPPLY OUTLOOK

Idaho's west central mountains received almost two months worth of precipitation during March. These storms made up for dry conditions in January and February and boosted snowpacks beyond their normal peak amounts. Water year-to-date precipitation since October 1st stands at 109% of average. The greatest monthly precipitation was in the Weiser basin at 194% of average. West Branch and Bear Saddle SNOTELs received over 10 inches of precipitation, beating the previous monthly precipitation record for March by over an inch. The Weiser River topped flood stage from March 15-17; the river reached a maximum of 12.15 feet or 18,600 cfs; flood stage is ~9.5 feet. As of April 1, the snowpack in the Weiser basin is 117% of average. The Boise basin received 181% of its normal March precipitation helping the snowpack jump from 82% on March 1 to 106% on April 1. Reservoir managers have already started increasing outflows from Lucky Peak to create room for the snowmelt. The Payette basin received 169% of its average March precipitation, breaking March records at Big Creek and Brundage Reservoir SNOTEL sites. Snowpacks in the Payette jumped from 89% to 108% between March 1 and April 1. Taken together, the reservoirs in the Boise system are storing 77% of capacity, or 125% of average; the Payette system is 70% of capacity, 115% of average. Streamflow forecasts for the Boise and Payette rivers and tributaries are 100-113% of average, while the Weiser is forecast at 128%. With above normal snowpacks and better than average reservoir storage, water users are in great shape for summer. As snowmelt begins reservoir managers will be figuring out the best way to create the space needed for the snowmelt while keeping the rivers downstream of dams within their banks.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ======= Wetter =====>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Weiser R nr Weiser (1)	APR-JUL	305	435	500	128	570	740	390
	APR-SEP	335	465	535	127	610	785	420
SF Payette R at Lowman	APR-JUL	373	412	440	100	469	512	440
	APR-SEP	425	470	500	101	535	580	495
Deadwood Res Inflow (1,2)	APR-JUL	115	134	143	107	152	171	134
	APR-SEP	120	142	152	107	162	184	142
Lake Fk Payette R nr McCall	APR-JUL	80	89	95	112	101	111	85
	APR-SEP	82	92	98	110	105	115	89
NF Payette R at Cascade (1,2)	APR-JUL	455	545	585	113	625	715	520
	APR-SEP	460	555	600	111	645	740	540
NF Payette R nr Banks (2)	APR-JUL	635	710	760	113	810	885	675
	APR-SEP	640	725	780	111	835	920	700
Payette R nr Horseshoe Bend (1,2)	APR-JUL	1500	1710	1800	110	1890	2100	1640
	APR-SEP	1550	1800	1920	109	2040	2290	1760
Boise R nr Twin Springs (1)	APR-JUL	535	625	670	106	715	805	635
	APR-SEP	580	680	725	105	770	870	690
SF Boise R at Anderson Ranch (1,2)	APR-JUL	445	525	560	104	595	675	540
	APR-SEP	470	555	595	103	635	720	580
Mores Ck nr Arrowrock Dam	APR-JUL	98	121	138	105	156	185	131
	APR-SEP	103	127	145	106	164	194	137
Boise R nr Boise (1,2)	APR-JUN	1160	1280	1330	106	1380	1500	1260
	APR-JUL	1180	1390	1480	105	1570	1780	1410
	APR-SEP	1280	1500	1600	105	1700	1920	1530

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	9.7	7.6	8.8
CASCADE	693.2	495.4	456.2	428.8
DEADWOOD	161.9	104.5	95.2	91.6
ANDERSON RANCH	450.2	342.5	311.9	262.8
ARROWROCK	272.2	225.6	229.3	204.5
LUCKY PEAK	293.2	216.9	155.8	162.6
LAKE LOWELL (DEER FLAT)	165.2	119.7	111.7	126.9

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	125	130
Weiser River	4	157	117
North Fork Payette	8	163	113
South Fork Payette	5	153	101
Payette Basin Total	14	155	108
Middle & North Fork Boise	5	145	98
South Fork Boise River	9	141	105
Mores Creek	5	140	111
Boise Basin Total	16	141	105
Canyon Creek	2	110	145

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
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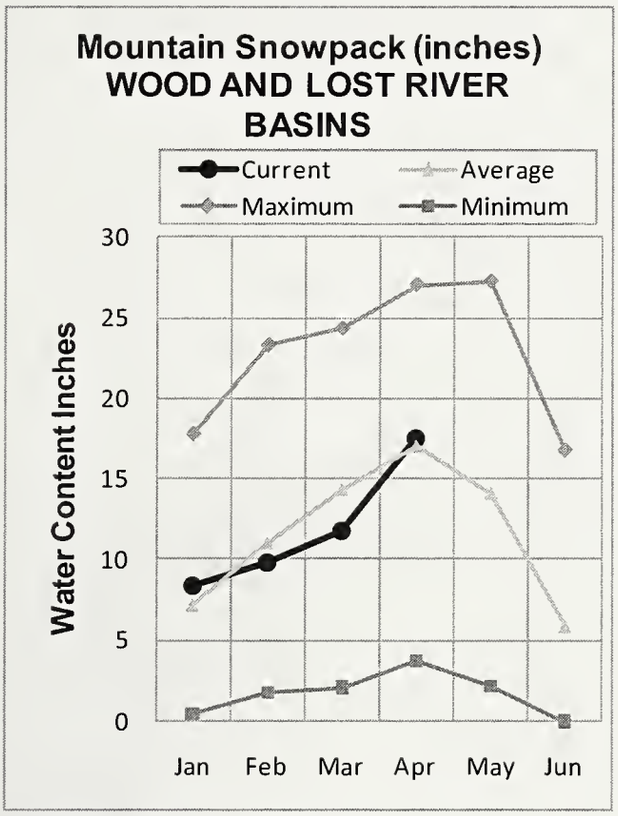
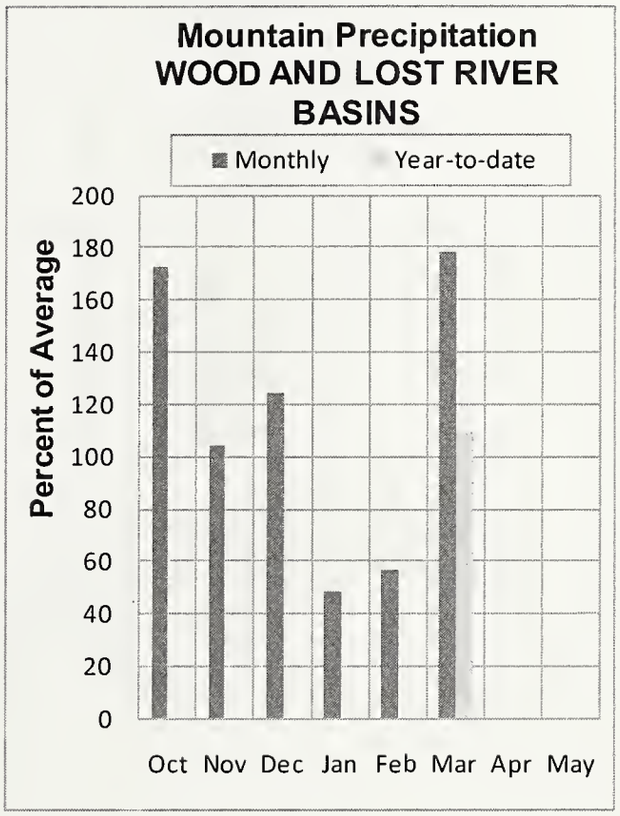
WOOD and LOST RIVER BASINS

APRIL 1, 2011





WATER SUPPLY OUTLOOK

Idaho's central mountains benefitted from twice the average monthly precipitation in March. Monthly precipitation was 178% of average for the region, boosting April 1 snowpacks 15-25% from last month and helping all basins exceed their normal seasonal peak amounts. To emphasize how March equaled two months worth of precipitation consider Lost Wood Divide SNOTEL; March saw 15 days with precipitation adding 6.3 inches of water to the snowpack. In comparison, January and February combined had 14 days of precipitation and increased the snowpack's water content by only 3.2 inches. As of April 1, snowpacks are 104% of average in the Big Wood, 123% in the Little Wood, 109% in the Big Lost, and 114% in the Little Lost. Precipitation since October first across the region stands at 109% of average. Streamflow forecasts call for 97-113% of average amounts for the April-July period. Reservoir storage in Little Wood and Mackay reservoirs is currently 118% of average, which equates to 76% of capacity in Little Wood and 87% of capacity for Mackay. Magic Reservoir is currently 104% of average and 58% of capacity. The big increase in snowpacks has eased last month's water supply concerns for the Big and Little Lost basins; this month's Surface Water Supply Index (SWSI) indicates that water supplies should be adequate in all basins. In fact, the cool and wet trend is expected to continue through April, so water users might think about favoring the wetter forecast (30% chance of exceeding).

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Big Wood R at Hailey (1)	APR-JUL	195	255	280	110	305	365	255
	APR-SEP	215	280	310	107	340	405	290
Big Wood R ab Magic Res	APR-JUL	154	187	210	111	235	265	190
	APR-SEP	165	200	225	110	250	285	205
Camas Ck nr Blaine	APR-JUL	65	85	101	101	118	145	100
	APR-SEP	66	86	102	101	119	146	101
Big Wood R bl Magic Dam (2)	APR-JUL	225	275	310	107	345	395	290
	APR-SEP	235	290	325	107	360	415	305
Little Wood R ab High Five Ck	APR-JUL	53	68	80	103	93	113	78
	APR-SEP	58	74	87	102	101	122	85
Little Wood near Carey (2)	APR-JUL	65	78	86	99	94	107	87
	APR-SEP	71	84	93	99	102	115	94
Big Lost R at Howell Ranch	APR-JUL	126	154	175	101	197	230	173
	APR-SEP	140	172	195	99	220	260	197
Big Lost R bl Mackay Res	APR-JUL	106	124	137	97	150	168	141
	APR-SEP	126	149	165	96	181	205	172
Little Lost R nr Howe	APR-JUL	25	31	35	113	40	47	31
	APR-SEP	31	38	43	110	49	58	39

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	111.4	91.8	107.1
LITTLE WOOD	30.0	22.9	28.2	19.4
MACKAY	44.4	38.7	41.4	32.7

WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	147	98
Camas Creek	5	138	120
Big Wood Basin Total	13	145	104
Fish Creek	3	183	139
Little Wood River	8	161	119
Big Lost River	6	168	109
Little Lost River	4	190	114
Birch-Medicine Lodge Cree	4	159	122
Camas-Beaver Creeks	4	186	109

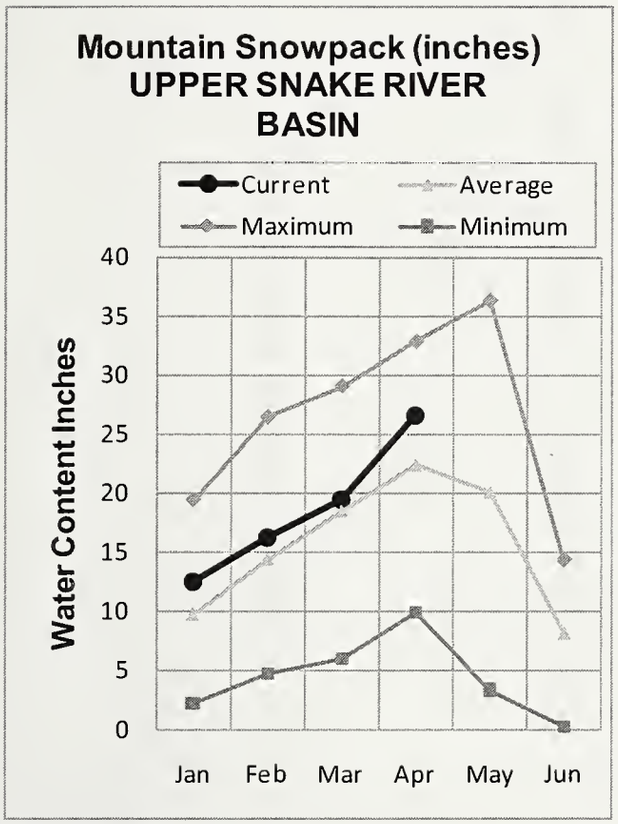
* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

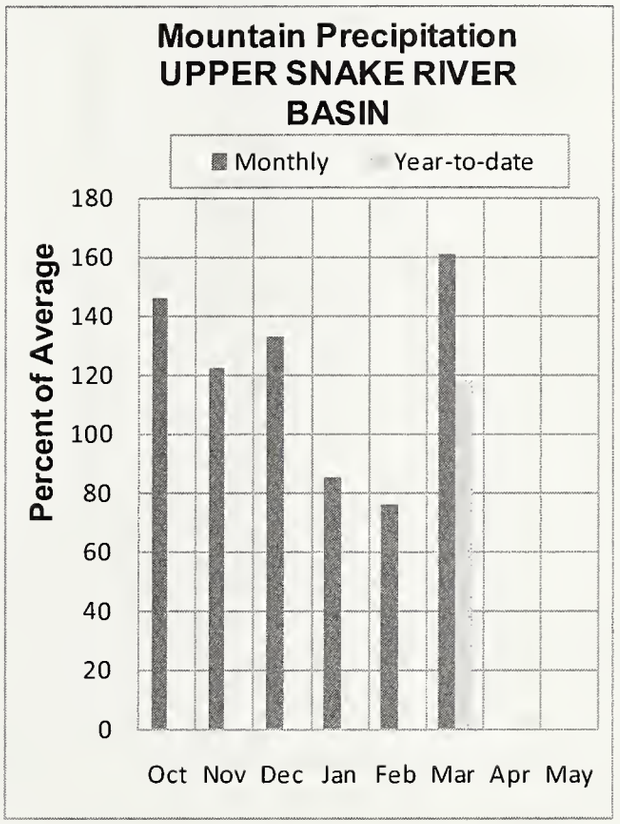
The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

UPPER SNAKE BASIN

APRIL 1, 2011





WATER SUPPLY OUTLOOK

March brought the year's best precipitation to the Upper Snake, increasing snowpacks further above average. Blind Bull and Cottonwood Creek SNOTEL sites in the Greys and Salt River drainages set monthly precipitation records for March; each had 6.9 inches of precipitation. To the north, White Elephant in the Henrys Fork basin also set a record with 11.3 inches. Snowpacks jumped 15-30% from March 1 with the biggest increases in the Willow and Blackfoot basins. Snowpacks are the best since 1997 and all basins have surpassed their average peak amounts. April 1 snowpacks are 115% in the northern headwaters including; Henrys Fork, Falls, Teton, Snake above Jackson Lake, Pacific Creek and Gros Ventre basins. To the south, snowpacks are about 120% of average in the Hoback, Greys, Salt and Portneuf basins. The greatest snowpacks are in Willow Creek at 136% and Blackfoot at 127%. The eight reservoirs above American Falls are storing an average amount and are 71% of capacity. Expect above average streamflow this summer with forecasts ranging from about 110-150% of average. There should be plenty of water to fill the reservoirs once snowmelt starts. No water shortages are expected this year since only 4.5 MAF of water is needed for adequate water supply for water users below the Snake near Heise stream gage. The Surface Water Supply Index for the Snake River at Heise predicts a water supply of 6.3 MAF using the driest streamflow forecast (90% chance of exceeding) and the combined storage of Jackson Lake and Palisades; that minimum forecast amount is still greater than any year since 1997. With the cool and wet trend expected to continue through April, water users might hedge towards the wetter streamflow forecasts (30 or 10% chance of exceeding); these forecast could produce a water supply of over 7.0 MAF and place 2011 as one of top ten water supply years on record since 1911.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<====== Drier ====== Future Conditions ====== Wetter ======>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Henrys Fk nr Ashton (2)	APR-JUL	525	590	640	112	690	770	570
	APR-SEP	700	780	840	110	900	995	765
Falls R nr Ashton (2)	APR-JUL	338	380	410	108	441	489	380
	APR-SEP	405	455	490	109	527	583	450
Teton R nr Driggs	APR-JUL	161	189	210	127	232	265	165
	APR-SEP	197	234	260	124	288	331	210
Teton R nr St. Anthony	APR-JUL	393	449	490	121	532	598	405
	APR-SEP	471	537	585	122	635	711	480
Henrys Fork nr Rexburg (2)	APR-JUL	1500	1640	1730	111	1820	1960	1560
	APR-SEP	1950	2100	2210	110	2320	2470	2010
Snake R at Flagg Ranch	APR-JUL	525	565	590	119	615	655	495
	APR-SEP	580	620	650	119	680	720	545
Snake R nr Moran (1,2)	APR-JUL	860	955	1000	123	1040	1140	815
	APR-SEP	935	1050	1100	122	1150	1260	905
Pacific Ck at Moran	APR-JUL	179	205	220	129	235	260	171
	APR-SEP	188	215	230	129	245	270	178
Buffalo Fork ab Lava nr Moran	APR-JUL	295	325	345	115	365	395	301
	APR-SEP	330	365	390	113	415	450	344
Gros Ventre R at Kelly	APR-JUL	194	233	260	130	287	326	200
	APR-JUL	194	233	260	130	287	326	200
Snake R ab Res nr Alpine (1,2)	APR-JUL	2620	2840	2940	124	3040	3260	2370
	APR-SEP	2950	3230	3360	123	3490	3770	2730
Greys R nr Alpine	APR-JUL	422	450	470	138	490	518	340
	APR-SEP	481	516	540	137	564	599	395
Salt R nr Etna	APR-JUL	428	489	530	156	571	632	340
	APR-SEP	480	557	610	145	663	740	420
Snake R nr Irwin (1,2)	APR-JUL	3860	4180	4330	130	4480	4800	3330
	APR-SEP	4400	4770	4940	128	5110	5480	3870
Snake R nr Heise (2)	APR-JUL	4230	4470	4630	130	4790	5030	3560
	APR-SEP	4830	5110	5300	127	5490	5770	4160
Willow Ck nr Ririe (2)	APR-JUL	96	113	125	154	137	154	81
Blackfoot R ab Res nr Henry	APR-JUN	66	85	100	137	116	142	73
Portneuf R at Topaz	APR-JUL	72	84	92	114	101	114	81
	APR-SEP	92	105	114	114	124	138	100
Snake R at Neeley (1,2)	APR-JUL	3530	4270	4600	142	4930	5670	3240
	APR-SEP	3750	4540	4900	140	5260	6050	3510

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	90.0	86.7	85.5
ISLAND PARK	135.2	100.3	116.8	114.6
GRASSY LAKE	15.2	13.5	12.9	12.3
JACKSON LAKE	847.0	659.5	631.1	486.6
PALISADES	1400.0	833.6	1248.7	941.5
RIRIE	80.5	48.5	44.9	41.6
BLACKFOOT	348.7	203.0	210.0	229.8
AMERICAN FALLS	1672.6	1329.5	1666.8	1443.2

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Henrys Fork-Falls River	9	222	117
Teton River	8	189	114
Henrys Fork above Rexburg	17	207	116
Snake above Jackson Lake	9	221	114
Pacific Creek	3	201	117
Gros Ventre River	4	211	116
Hoback River	5	253	119
Greys River	4	204	124
Salt River	5	196	123
Snake above Palisades	28	221	118
Willow Creek	7	203	136
Blackfoot River	5	197	127
Portneuf River	7	178	123
Snake abv American Falls	47	211	122

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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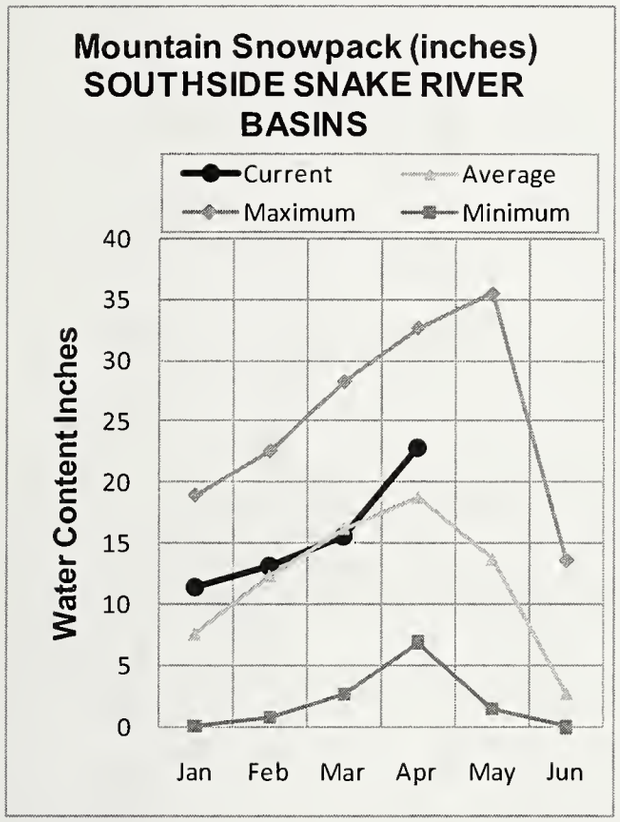
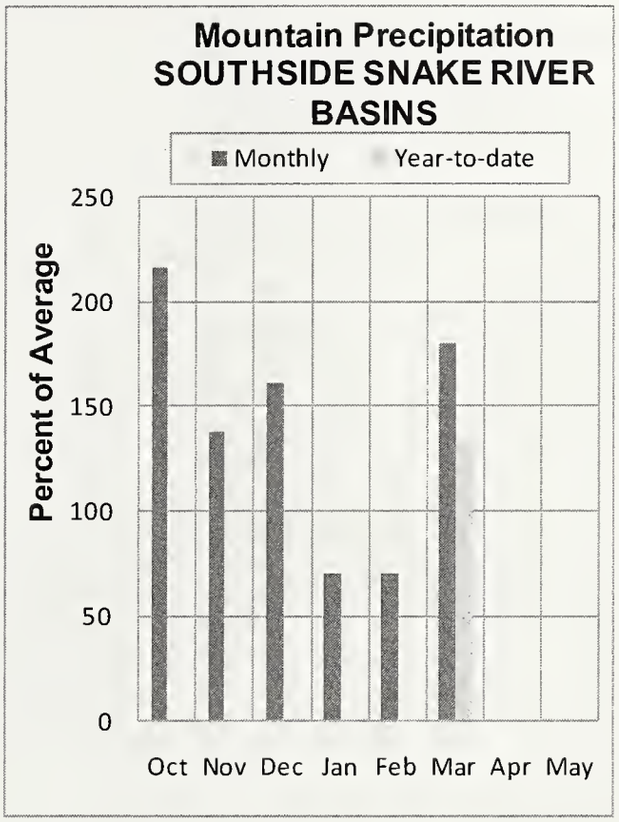
(3) - Median value used in place of average.

SOUTHSIDE SNAKE RIVER BASINS

APRIL 1, 2011





WATER SUPPLY OUTLOOK

With the best snowpack since 2006, the basins south of the Snake River are in good shape for the water supply season. All basins have reached or surpassed their average peak snow amounts. April 1 snowpacks are 117% in the Goose basin, 120% in Salmon Falls, 138% in the Bruneau and 161% in the Owyhee basin. March precipitation was about 160-190% of average across the region, increasing water year-to-date precipitation since October 1 to about 130% of average. Streamflow forecasts range from 110% of average for Oakley Reservoir inflow, to 132% for the Owyhee River near Gold Creek and 154% for the Bruneau River and up to 163% for Salmon Falls Creek. Reservoir storage is 88% of capacity, 106% of average in Owyhee Reservoir; 33% of capacity, 86% of average in Salmon Falls; and 34% of capacity, 71% of average in Oakley. Streamflow forecasts are high enough that Owyhee Reservoir will fill but Salmon Falls and Oakley reservoirs are not expected to fill unless the spring remains very wet and runoff nears the 30% Chance of Exceedance Streamflow Forecast or higher. The Surface Water Supply Indexes indicate reservoir storage combined with even the driest forecasts will provide enough water to meet irrigation demand in the Owyhee and Salmon Falls basins. March precipitation boosted streamflow forecasts enough to ensure Oakley users have a bit of breathing room as both the 50% and 70% Chance of Exceeding Forecasts when combined with the 25,700 acre-feet in the reservoir storage will provide more than the 50,000 acre-feet needed for irrigation needs.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Goose Ck ab Trapper Ck nr Oakley	APR-JUL	22	27	31	137	35	40	23
	APR-SEP	23	29	33	135	37	43	24
Trapper Ck nr Oakley	APR-JUL	5.2	6.2	6.8	115	7.4	8.4	5.9
	APR-SEP	6.5	7.5	8.2	113	8.9	9.9	7.3
Oakley Res Inflow	APR-JUL	18.7	26	32	110	38	49	29
	APR-SEP	21	30	36	113	43	54	32
Salmon Falls Ck nr San Jacinto	APR-JUN	89	108	122	163	137	160	75
	APR-JUL	93	114	129	161	145	171	80
	APR-SEP	97	118	134	160	151	177	84
Bruneau R nr Hot Springs	APR-JUL	217	273	315	154	360	431	205
	APR-SEP	227	286	330	154	377	452	215
Reynolds Ck at Tollgate	APR-JUL	8.2	9.8	11.0	134	12.3	14.2	8.2
Owyhee R nr Gold Ck (2)	APR-SEP	14.2	25	32	133	39	50	24
Owyhee R nr Rome	APR-JUL	420	509	570	150	631	720	380
Owyhee R bl Owyhee Dam (2)	APR-JUL	428	521	590	148	663	778	400
	APR-SEP	467	561	630	147	703	817	430

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	75.6	25.7	28.4	36.0
SALMON FALLS	182.6	60.1	49.8	70.2
WILDHORSE RESERVOIR	71.5	40.9	29.2	46.2
OWYHEE	715.0	629.0	276.3	593.0
BROWNLEE	1420.0	744.8	1256.2	1029.5

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	6	147	130
Goose-Trapper Creeks	7	147	121
Salmon Falls Creek	8	162	120
Bruneau River	8	160	138
Reynolds Creek	6	123	118
Owyhee Basin Total	19	142	161

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

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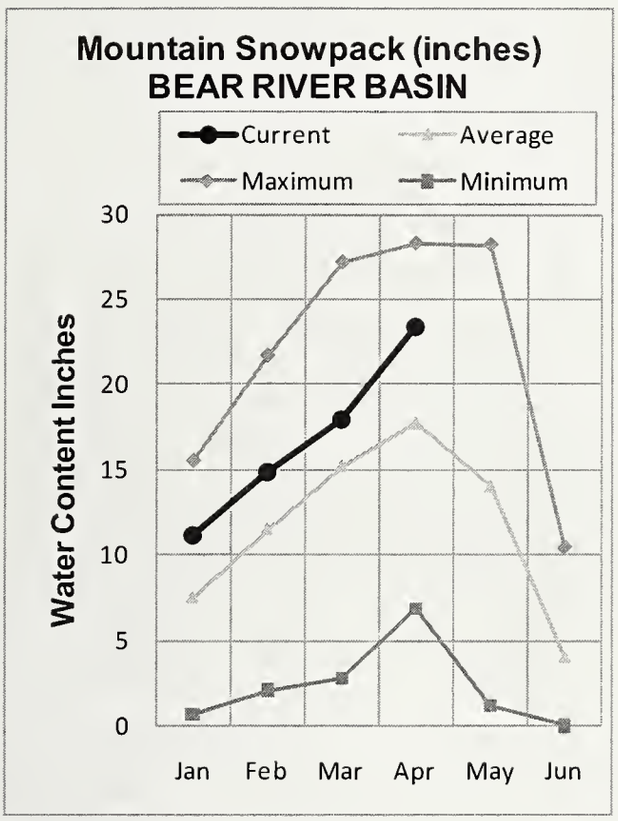
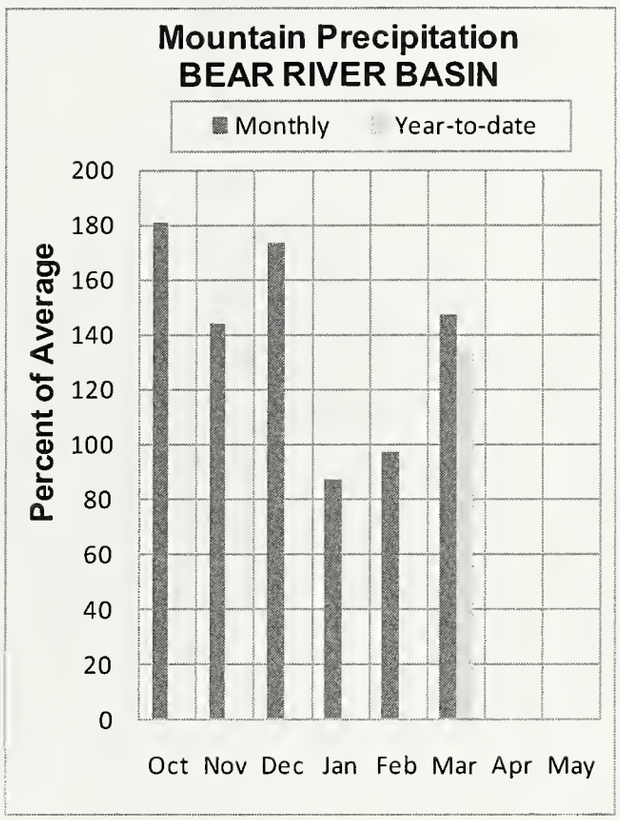
(2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN

APRIL 1, 2011





WATER SUPPLY OUTLOOK

Bear River water users won't be discussing a lack of water this spring, unless they are talking about the dry decade leading up to 2011. A snowpack of 132% of average resides in the Bear River drainage, this is not the highest on record, but it ranks in the top 5 since records began in the early 1960s. The current snowpack is similar to the April 1 snow in 1997 and greater than 1984 water year when April-September streamflows were 254% of average for the Bear River below Stewart Dam. Don't expect that kind of runoff this year as even the maximum forecast (10% chance of exceedance) isn't predicting that much this year. The month of March brought 147% of average precipitation, which continued the stormy trend this year. Wet soils, wet spring weather and a good snowpack will pave the way for above average streamflows this summer. It is rare that even the lowest streamflow forecast (90% exceedance forecast) calls for well above average streamflows for all rivers in the Bear basin. In general, the 50% chance exceedance forecasts are used for analysis and these forecasts range from a low of 138% of average for the Smiths Fork up to 184% of average for Big Creek. The main stem of the Bear River is forecast at about 150% of average through the summer. Bear Lake is at a similar level as last year, storing 62% of average, 41% full; this will provide users with an adequate water supply this season and allow excess water to be stored in the lake. The take home message is that the water users should have more than adequate water supplies this year and Bear Lake should continue to rebound.

BEAR RIVER BASIN
Streamflow Forecasts - April 1, 2011

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear R nr UT-WY State Line	APR-JUL	141	158	170	150	182	199	113
	APR-SEP	158	177	190	152	205	220	125
Bear R abv Resv nr Woodruff	APR-JUL	163	188	205	151	220	245	136
	APR-SEP	177	205	220	155	235	265	142
Big Ck nr Randolph	APR-JUL	6.9	8.2	9.0	184	9.8	11.1	4.9
Smiths Fork nr Border	APR-JUL	120	133	142	138	151	164	103
	APR-SEP	142	157	167	138	177	192	121
Bear R bl Stewart Dam	APR-JUL	270	335	380	162	425	490	234
	APR-SEP	305	380	430	164	480	555	262
Little Bear at Paradise	APR-JUL	63	74	82	178	90	101	46
Logan R nr Logan	APR-JUL	162	179	190	151	200	220	126
Blacksmith Fk nr Hyrum	APR-JUL	64	79	90	188	101	116	48

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of March

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	576.9	568.4	923.8
MONTPELIER CREEK	4.0	2.7	2.8	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - April 1, 2011

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Smiths & Thomas Forks	4	214	132
Bear River ab WY-ID line	12	236	138
Montpelier Creek	2	214	128
Mink Creek	4	239	144
Cub River	3	226	145
Bear River ab ID-UT line	26	228	138
Malad River	3	170	129

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural volume - actual volume may be affected by upstream water management.
(3) - Median value used in place of average.

Streamflow Adjustment List for All Forecasts Published in Idaho Water Supply Outlook Report: Streamflow forecasts are projections of runoff volumes that would occur without influences from upstream reservoirs or diversions. These values are referred to as natural, unregulated or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made for each forecast point. **(Revised Jan 2011).**

Panhandle River Basins

Kootenai R at Leonia, ID
+ Lake Koocanusa (Storage Change)

Moyie R at Eastport, ID – No Corrections

Boundary Ck nr Porthill, ID – No Corrections

Smith Creek nr Porthill, ID – No Corrections

Clark Fork R at Whitehorse Rapids, ID
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids Res (Storage Change)

Pend Oreille Lake Inflow, ID
+ Pend Oreille R at Newport, WA
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids (Storage Change
+ Pend Oreille Lake (Storage Change)
+ Priest Lake (Storage Change)

Priest R nr Priest R, ID
+ Priest Lake (Storage Change)

NF Coeur d'Alene R at Enaville, ID - No Corrections

St. Joe R at Calder, ID - No Corrections

Spokane R nr Post Falls, ID
+ Coeur d'Alene Lake (Storage Change)

Spokane R at Long Lake, WA
+ Coeur d'Alene Lake (Storage Change)
+ Long Lake, WA (Storage Change)

Clearwater River Basin

Selway R nr Lowell - No Corrections

Lochsa R nr Lowell - No Corrections

Dworshak Res Inflow, ID
+ Clearwater R nr Peck, ID
- Clearwater R at Orofino, ID
+ Dworshak Res (Storage Change)

Clearwater R at Orofino, ID - No Corrections

Clearwater R at Spalding, ID
+ Dworshak Res (Storage Change)

Salmon River Basin

Salmon R at Salmon, ID - No Corrections

Lemhi R nr Lemhi, ID – No Corrections

MF Salmon R at MF Lodge, ID – No Corrections

SF Salmon R nr Krassel Ranger Station, ID – No Corrections

Johnson Creek at Yellow pine, ID – No Corrections

Salmon R at White Bird, ID - No Corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser, ID - No Corrections

SF Payette R at Lowman, ID - No Corrections

Deadwood Res Inflow, ID
+ Deadwood R bl Deadwood Res nr Lowman
+ Deadwood Res (Storage Change)

Lake Fork Payette R nr Mccall, ID – No Corrections

NF Payette R at Cascade, ID
+ Cascade Res (Storage Change)
+ Payette Lake (Storage Change)

NF Payette R nr Banks, ID
+ Cascade Res (Storage Change)
+ Payette Lake (Storage Change)

Payette R nr Horseshoe Bend, ID
+ Cascade Res (Storage Change)
+ Deadwood Res (Storage Change)
+ Payette Lake (Storage Change)

Boise R nr Twin Springs, ID - No Corrections

SF Boise R at Anderson Ranch Dam, ID
+ Anderson Ranch Res (Storage Change)

Mores Ck nr Arrowrock Dam – No Corrections

Boise R nr Boise, ID
+ Anderson Ranch Res (Storage Change)
+ Arrowrock Res (Storage Change)
+ Lucky Peak Res (Storage Change)

Wood and Lost River Basins

Big Wood R at Hailey, ID - No Corrections

Big Wood R ab Magic Res, ID
+ Big Wood R nr Bellevue, ID
+ Willow Ck

Camas Ck nr Blaine – No Corrections

Big Wood R bl Magic Dam nr Richfield, ID
+ Magic Res (Storage Change)

Little Wood R ab High Five Ck, ID – No Corrections

Little Wood R nr Carey, ID
+ Little Wood Res (Storage Change)

Big Lost R at Howell Ranch, ID - No Corrections

Big Lost R bl Mackay Res nr Mackay, ID
+ Mackay Res (Storage Change)

Little Lost R bl Wet Ck nr Howe, ID - No Corrections

Upper Snake River Basin

Henrys Fork nr Ashton, ID
+ Henrys Lake (Storage Change)
+ Island Park Res (Storage Change)

Henrys Fork nr Rexburg, ID
+ Henrys Lake (Storage Change)
+ Island Park Res (Storage Change)
+ Grassy Lake (Storage Change)
+ Diversions from Henrys Fk btw Ashton to St. Anthony, ID
+ Diversions from Henrys Fk btw St. Anthony to Rexburg, ID
+ Diversions from Falls R ab nr Ashton, ID
+ Diversions from Falls R nr Ashton to Chester, ID

Falls R nr Ashton, ID
+ Grassy Lake (Storage Change)
+ Diversions from Falls R ab nr Ashton, ID

Teton R nr Driggs, ID - No Corrections

Teton R nr St. Anthony, ID
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R ab St. Anthony, ID

Snake R nr Moran, WY
+ Jackson Lake (Storage Change)

Pacific Ck at Moran, WY – No Corrections
Buffalo Fork ab Lava nr Moran – No Corrections
Gros Ventre R at Kelly – No Corrections
Snake R ab Palisades, WY
+ Jackson Lake (Storage Change)
Greys R ab Palisades, WY – No Corrections
Salt R ab Palisades, WY – No Corrections
Snake R nr Irwin, ID
+ Jackson Lake (Storage Change)
+ Palisades Res (Storage Change)
Snake R nr Heise, ID
+ Jackson Lake (Storage Change)
+ Palisades Res (Storage Change)
Willow Ck nr Ririe, ID
+ Ririe Res (Storage Change)
Blackfoot Reservoir Inflow, ID
+ Blackfoot Reservoir releases
+ Blackfoot Res (Storage Change)
Portneuf R at Topaz, ID - No Corrections
Snake R at Neeley, ID
+ Snake R at Neeley (observed)
+ All Corrections made for Henrys Fk nr Rexburg, ID
+ Jackson Lake (Storage Change)
+ Palisades Res (Storage Change)
+ Diversions from Snake R btw Heise and Shelly
+ Diversions from Snake R btw Shelly and Blackfoot

Southside Snake River Basins

Goose Ck ab Trapper Ck-no adjustments
Trapper Ck nr Oakley-no adjustments
Oakley Res Inflow, ID (does not include Birch Creek inflow)
+ Goose Ck ab Trapper Ck
+ Trapper Ck nr Oakley
Salmon Falls Ck nr San Jacinto, NV - No Corrections
Bruneau R nr Hot Springs, ID - No Corrections
Reynolds Ck at Tollgate - No Corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Res (Storage Change)
Owyhee R nr Rome, OR – No Corrections
Owyhee R bl Owyhee Dam, OR
+ Owyhee R bl Owyhee Dam, OR (observed)
+ Owyhee Res (Storage Change)
+ Diversions to North and South Canals
Snake R at King Hill, ID - No Corrections
Snake R nr Murphy, ID - No Corrections
Snake R at Weiser, ID - No Corrections
Snake R at Hells Canyon Dam, ID
+ Brownlee Res (Storage Change)

Bear River Basin

Bear R nr UT-WY Stateline, UT – No Corrections
Bear R ab Res nr Woodruff, UT – No Corrections
Big Ck nr Randolph – No Corrections
Smiths Fork nr Border, WY - No Corrections
Bear R bl Stewart Dam nr Montpelier, ID
+ Bear R bl Stewart Dam
+ Rainbow Inlet Canal
Little Bear R at Paradise – No Corrections
Logan R nr Logan – No Corrections
Blacksmith Fk nr Hyrum – No Corrections

Reservoir Capacity Definitions (Units in 1,000 Acre-Feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists these volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. **(Revised Jan 2011)**

Basin/ Reservoir	Dead Storage	Inactive Storage	Active Storage	Surcharge Storage	NRCS Capacity	NRCS Capacity Includes
Panhandle Region						
Hungry Horse	39.73	---	3451.00	---	3451.0	Active
Flathead Lake	Unknown	---	1791.00	---	1791.0	Active
Noxon Rapids	Unknown	---	335.00	---	335.0	Active
Pend Oreille	406.20	112.40	1042.70	---	1561.3	Dead+Inactive+Active
Coeur d'Alene	Unknown	13.50	225.00	---	238.5	Inactive+Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead+Inactive+Active
Clearwater Basin						
Dworshak	Unknown	1452.00	2016.00	---	3468.0	Inactive+Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	Unknown	46.70	646.50	---	693.2	Inactive+Active
Deadwood	Unknown	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive+Active
Arrowrock	Unknown	---	272.20	---	272.2	Active
Lucky Peak	Unknown	28.80	264.40	13.80	293.2	Inactive+Active
Lake Lowell	7.90	5.80	159.40	---	165.2	Inactive+Active
Wood/Lost Basins						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	Unknown	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	Unknown	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active+Surcharge
Grassy Lake	Unknown	---	15.18	---	15.2	Active
Jackson Lake	Unknown	---	847.00	---	847.0	Active
Palisades	44.10	155.50	1200.00	---	1400.0	Dead+Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	Unknown	---	348.73	---	348.7	Active
American Falls	Unknown	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	0.00	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active+Inactive
Wildhorse	Unknown	---	71.50	---	71.5	Active
Owyhee	406.83	---	715.00	---	715.0	Active
Brownlee	0.45	444.70	975.30	---	1420.0	Inactive+Active
Bear River Basin						
Bear Lake	5000.00	119.00	1302.00	---	1421.0	Active+Inactive: includes 119 that can be released
Montpelier Creek	0.21	---	3.84	---	4.0	Dead+Active

Interpreting Water Supply Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of .having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example
Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the **90** percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins
Streamflow Forecasts – January 2006

Forecast Point	Forecast Period	Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000 AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	690

*90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table

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Numerous other groups and agencies provide funding
and/or cooperative support for the collection, operation
and maintenance of the Snow Survey Program.
Their cooperation is greatly appreciated.